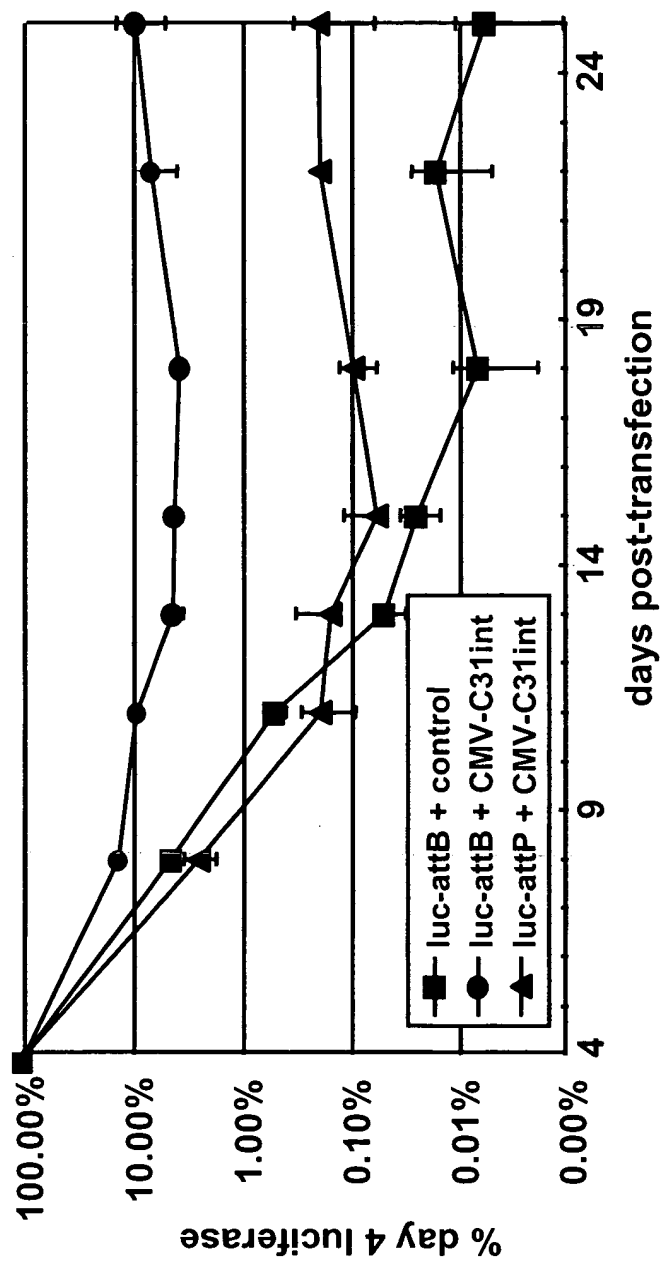
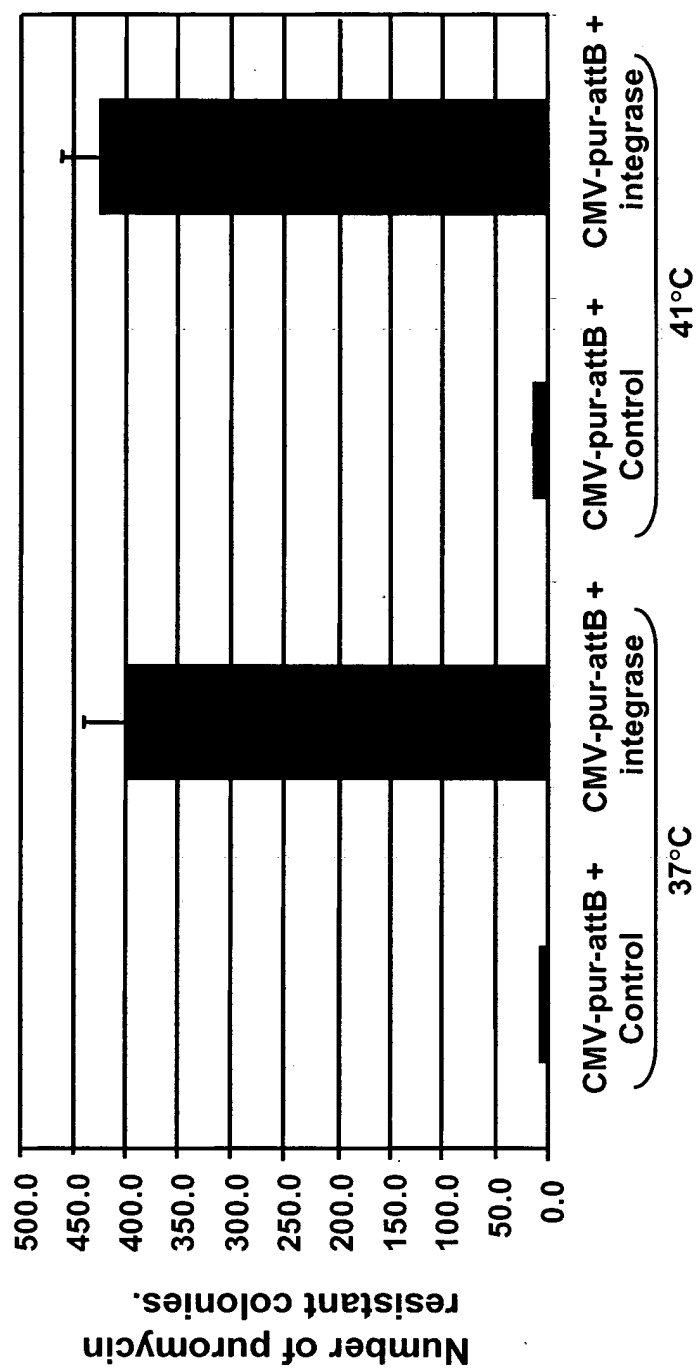
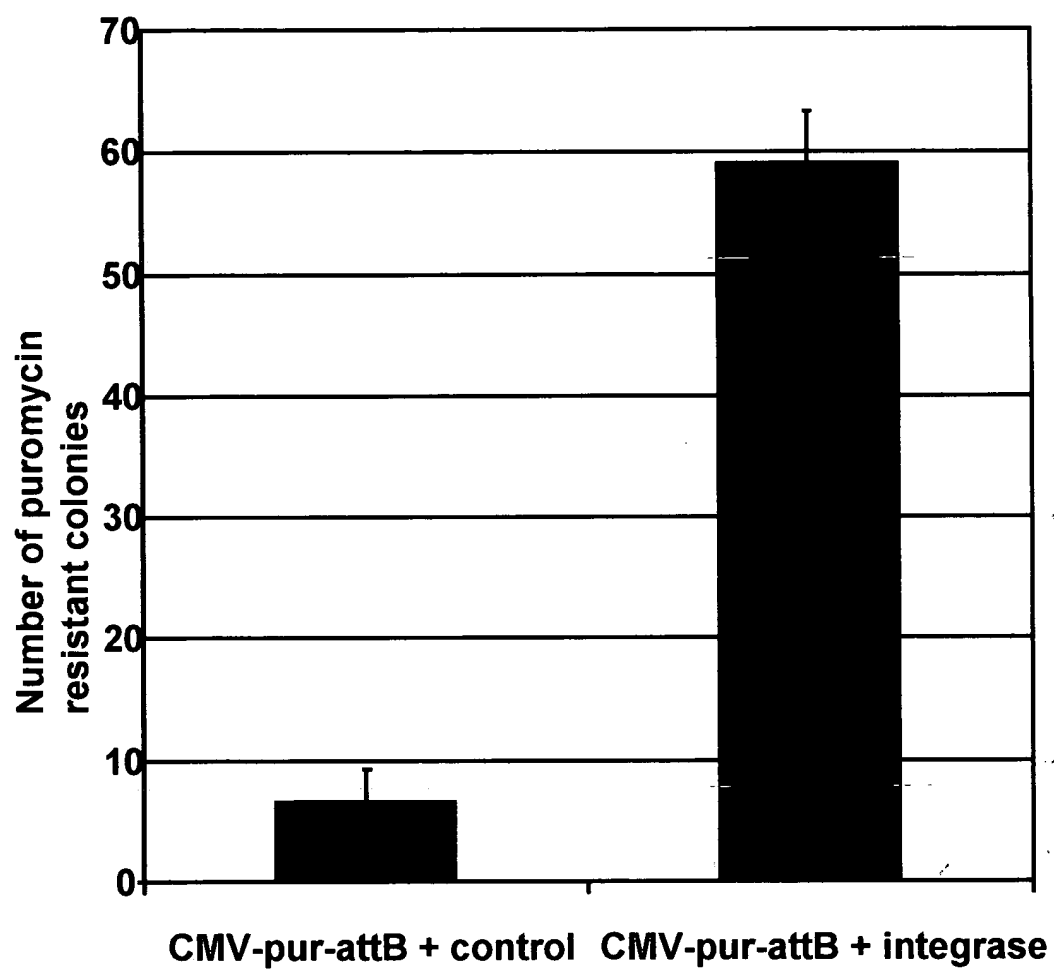


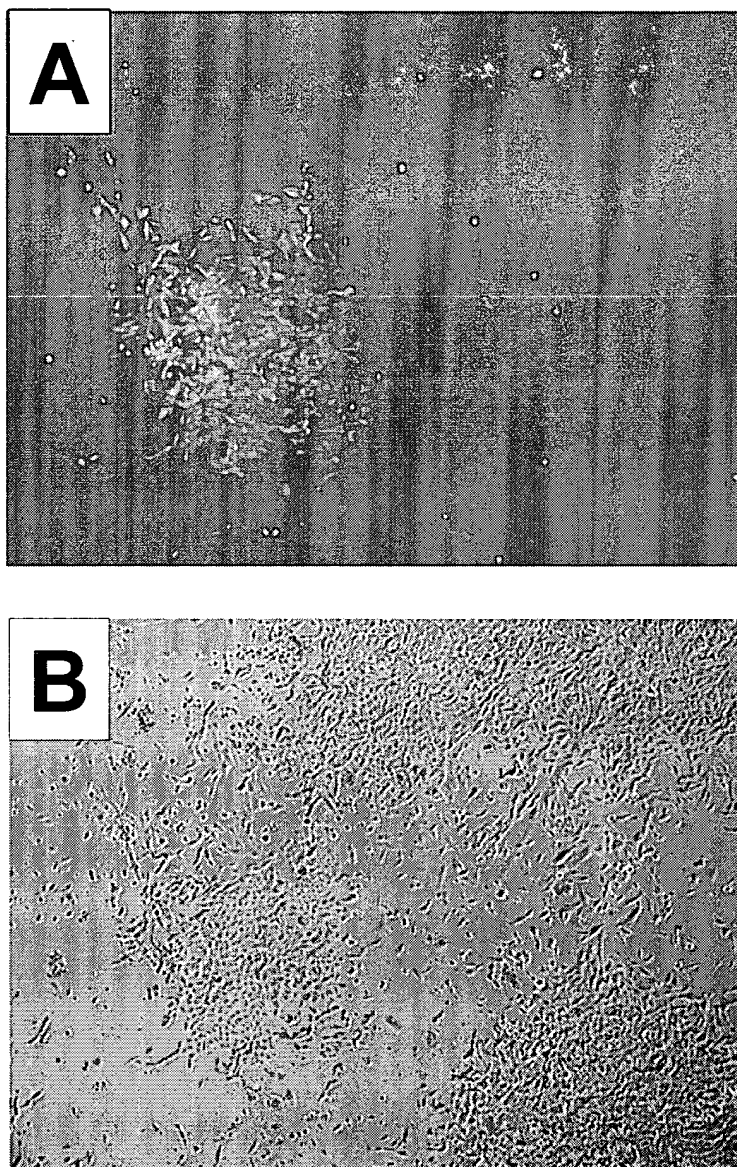
**Fig. 1**

*Fig. 2*

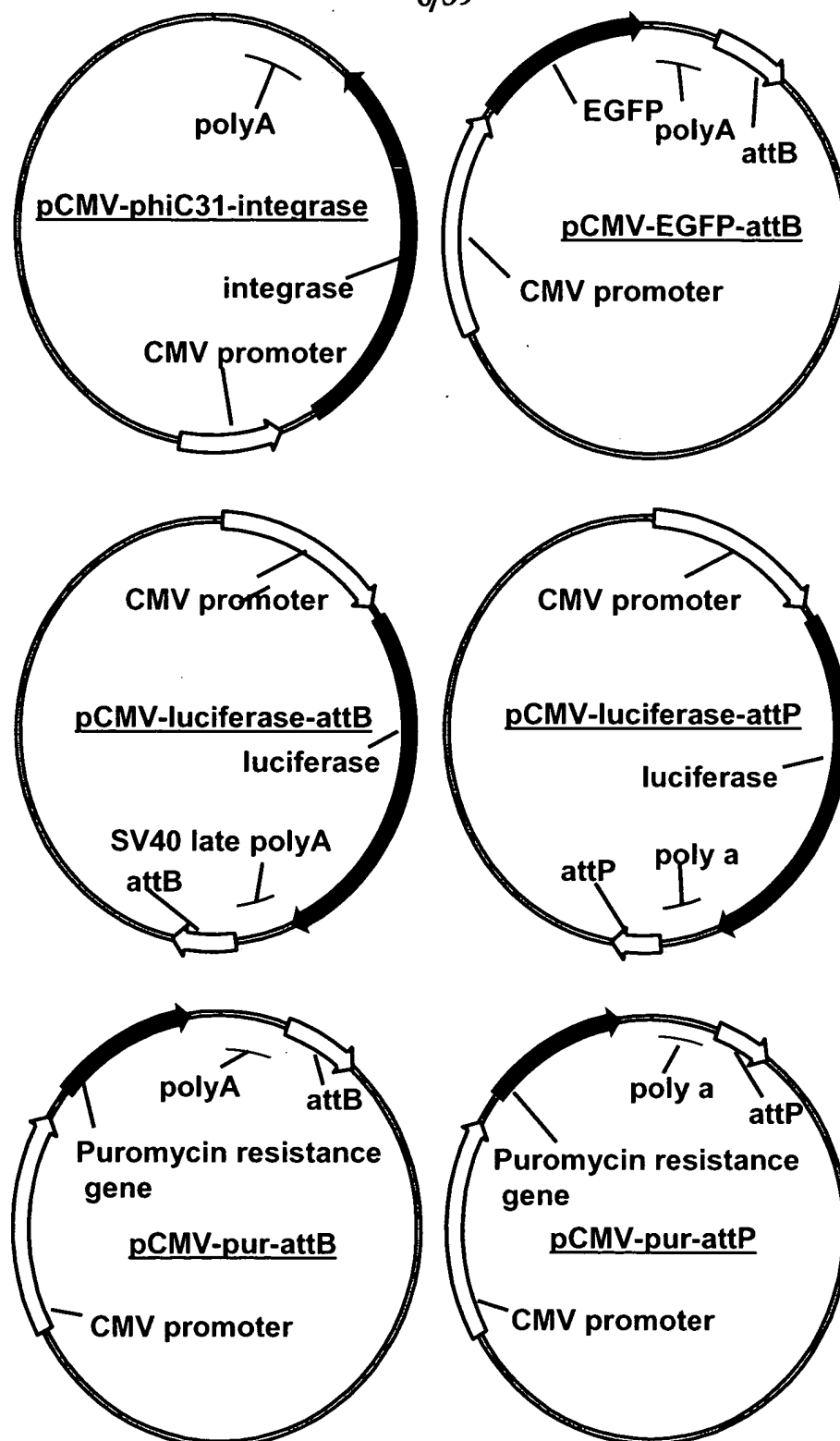
**Fig. 3**



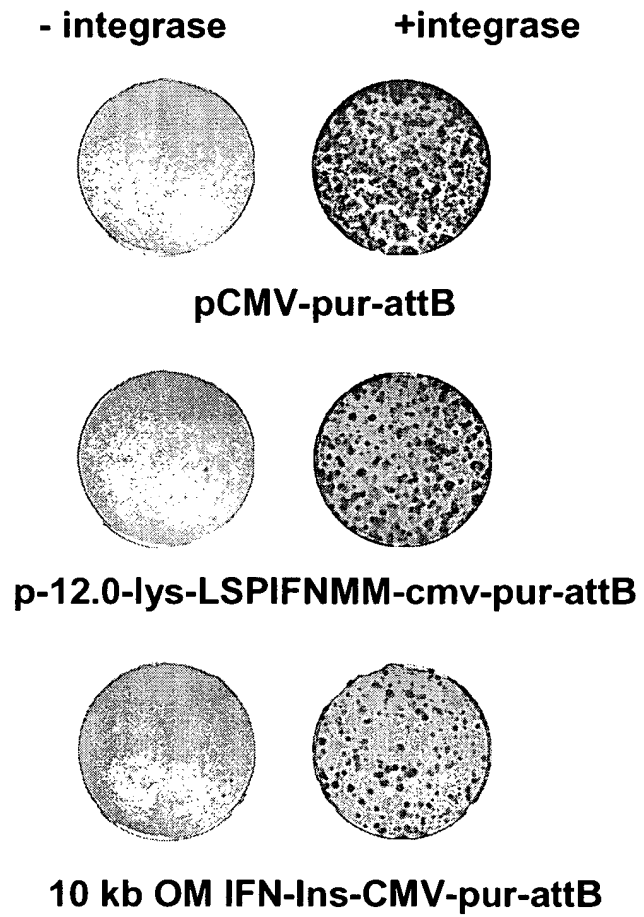
***Fig. 4***



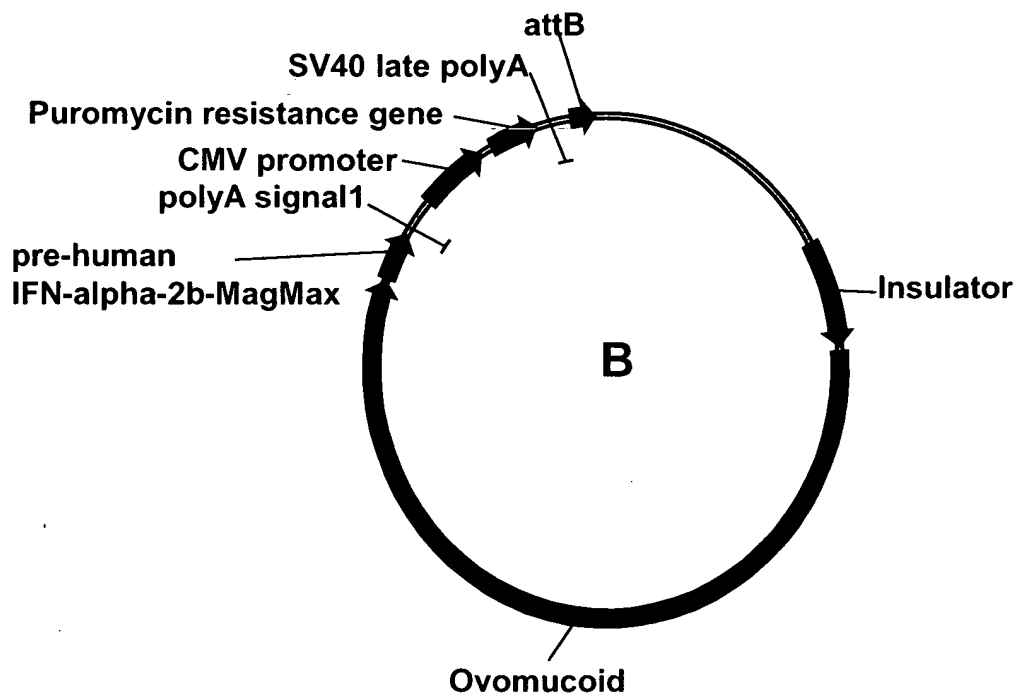
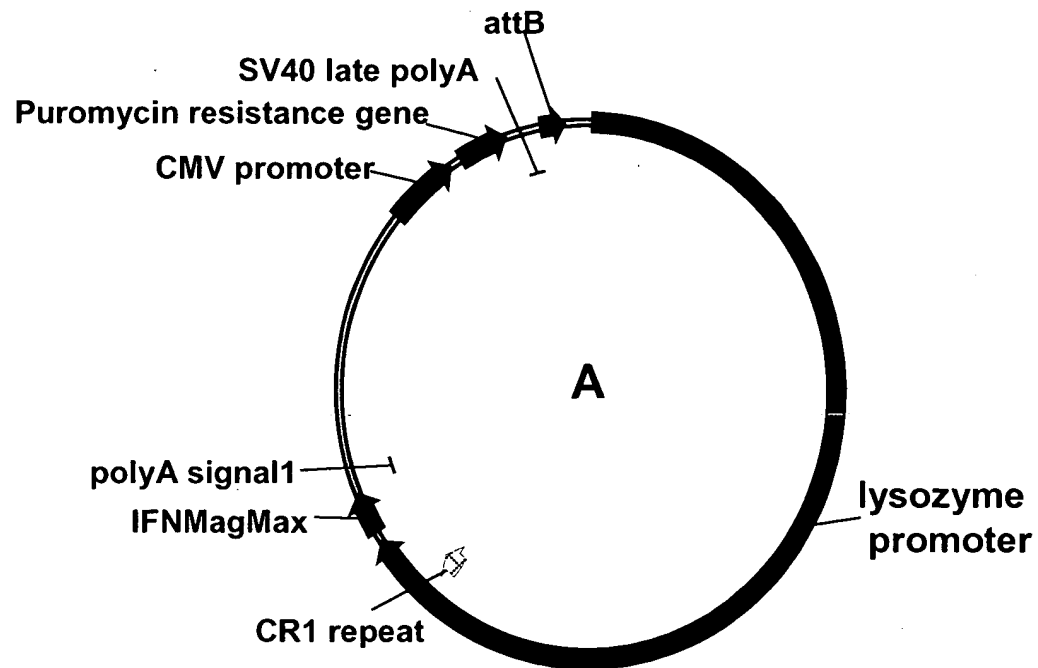
***Fig. 5***

**Fig. 6**

7/39



**Fig. 7**



**Fig. 8**



**pCMV-C31int (SEQ ID NO: 1)**

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TCACAAAGATCCCAAGCTAGCTTATAATACGACTCACTATAGGGAGAGAGCTATGACGTCGC  
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**Fig. 9**

**pCMV-luc-attB (SEQ ID NO: 2)**

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 CCCAGTGCAAGTGCAAGTGCCAGAACATTT

**Fig. 10**

**pCMV-luc-attP (SEQ ID NO: 3)**

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CTCCCGCTGAATTGGAATCCATCTTGCTCCAACACCCCAACATCTTCGACGCAGGTGTGCA  
GGTCTTCCCGACGATGACGCCGGTGAACCTCCCGCCGCGGTTGTTGTTTTGGAGCACGGAAA  
GACGATGACGGAAAAAGAGATCGTGGATTACGTGCGCAGTCAAGTAACAACCGCGAAAAAGT  
TGCGCGGAGGAGTTGTGTTTTGTGGACGAAGTACCGAAAGGTCTTACCGGAAAACCTCGACGCA  
AGAAAAATCAGAGAGATCCTCATAAAGGCCAAGAAGGGCGGAAAGATCGCCGTGTAATTCTA  
GAGTCGGGGCGGCGCGGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGACAAA  
CCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTA  
TTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCAATTTATGTT  
TCAGGTTTCAGGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTA  
AAATCGATAAGGATCAATTCGGCTTCGACTAGTACTGACGGACACACCGAAGCCCCGGCGGC  
AACCCTCAGCGGATGCCCCGGGGCTTCACGTTTTCCAGGTCAGAAGCGGTTTTTCGGGAGTA  
GTGCCCCAACTGGGGTAACCTTTGAGTTCTCTCAGTTGGGGGCGTAGGGTCGCCGACATGAC  
ACAAGGGGTTGTGACCGGGGTGGACACGTACGCGGGTGCTTACGACCGTCAGTCGCGCGAGC  
GCGACTAGTACAAGCCGAATTGATCCGTGACCGATGCCCTTGAGAGCCTTCAACCCAGTCA  
GCTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCGCACTTATGACTGTCTTCTTTATC  
ATGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCCTCGCTCACTGACTCGCTGC

GCTCGGTTCGTTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCC  
 ACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAAGGCCAGCAAAAAGGCCAGGAA  
 CCGTAAAAAGGCCGCGTTCGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACA  
 AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTT  
 CCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCCTGCCGCTTACCGGATACCTGTC  
 CGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTT  
 CGGTGTAGGTTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCCCGACCGC  
 TGGCCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACT  
 GGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCT  
 TGAAGTGGTGGCCTAACTACGGCTACACTAGAAAGGACAGTATTTGGTATCTGCGCTCTGCTG  
 AAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGCTGG  
 TAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAG  
 ATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATT  
 TTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTTAAATTAATAAATGAAGTTT  
 TAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTG  
 AGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTG  
 TAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGA  
 CCCACGCTCACC GGCTCCAGATTTATCAGCAATAAACCCAGCCAGCCGGAAGGGCCGAGCGCA  
 GAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGA  
 GTAAGTAGTTCGCCAGTTAATAGTTTGC GCAACGTTGTTGCCATTGCTACAGGCATCGTGGT  
 GTCACGCTCGTCGTTTGGTATGGCTTCATTACGCTCCGGTTC CCAACGATCAAGGCGAGTTA  
 CATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCTCGATCGTTGTCAGA  
 AGTAAGTTGGCCGCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGT  
 CATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAAT  
 AGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACAT  
 AGCAGAACTTTAAAGTGCTCATCATTGGAACGTTCTTCGGGGCGAAACTCTCAAGGAT  
 CTTACCGCTGTTGAGATCCAGTTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCAT  
 CTTTTACTTTACCCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAAG  
 GGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAG  
 CATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAAC  
 AAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGCGCA  
 TTAAGCGCGGCGGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGC  
 GCCCGCTCCTTTTCGCTTCTTCCCTTCCTTTCTCGCCACGTTTCGCCGGCTTTCCCCGTCAAG  
 CTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCCAAA  
 AACTTTGATTAGGGTGATGGTTACGTAAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCC  
 TTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAAACTGGAACAACACTCA  
 ACCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTTTCGGCCTATTGGTTA  
 AAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGTTTACAAT  
 TTCCCATTCGCCATTACAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGC  
 TATTACGCCAGCCAAAGCTACCATGATAAGTAAGTAATATTAAGGTACGGGAGGTACTTGGA  
 GCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCG  
 ATAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGC  
 TGTC CCGAGTGCAAGTGCAAGTGCCAGATGCAAGTGCAGGTGCCAGAACATTT

**Fig. 11**

**pCMV-pur-attB (SEQ ID NO: 4)**

CTAGAGTCGGGGCGGCCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC  
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT  
TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTAT  
GTTTCAGGTT CAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTG  
GTAAAATCGATAAGGATCAATTCGGCTTCAGGTACCGTCGACGATGTAGGTCACGGTCTCGA  
AGCCGCGGTGCGGGTGCCAGGGCGTGCCCTTGGGCTCCCCGGGCGCGTACTCCACCTCACCC  
ATCTGGTCCATCATGATGAACGGGTGCGAGGTGGCGGTAGTTGATCCCCGGCGAACGCGCGGCG  
CACCGGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGTGAGCACGGGACGTG  
CGACGGCGTCGGCGGGTGCGGATACGCGGGGCAGCGTCAGCGGGTTCTCGACGGTCACGGCG  
GGCATGTGACAGCCGAATTGATCCGTGACCGATGCCCTTGAGAGCCTTCAACCCAGTCAG  
CTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTTATCA  
TGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGCG  
CTCGGTGCTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCA  
CAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAAC  
CGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAA  
AAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTC  
CCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC  
GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTC  
GGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGACCGCT  
GCGCCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTG  
GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTT  
GAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGA  
AGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGT  
AGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGA  
TCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTT  
TGGTCATGAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAATAATGAAGTTTT  
AAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGA  
GGCACCTATCTCAGCGATCTGTCTATTTGCTTCATCCATAGTTGCCTGACTCCCCGTCGTGT  
AGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC  
CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAG  
AAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAG  
TAAGTAGTTCGCCAGTTAATAGTTTGC GCAACGTTGTTGCCATTGCTACAGGCATCGTGGTG  
TCACGCTCGTCGTTTGGTATGGCTTCATTACGCTCCGGTCCCAACGATCAAGGCGAGTTAC  
ATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTCAGAA  
GTAAGTTGGCCGCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTC  
ATGCCATCCGTAAGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATA  
GTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACATA  
GCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGGATC  
TTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCAACCAACTGATCTTCAGCATC  
TTTTACTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGG  
GAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGC  
ATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACA  
AATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGCGCAT  
TAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGCG  
CCCGCTCCTTTGCTTTCTTCCCTTCTCTCGCCACGTTGCGCGGCTTTCCCCGTCAAGC  
TCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCAAAA  
AACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCT  
TTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTCAA  
CCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTCGGCCTATTGGTTAA  
AAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGTTTACAATT  
TCCCATTGCGCATTACAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCT  
ATTACGCCAGCCCAAGCTACCATGATAAGTAAGTAATATTAAGGTACGGGAGGTACTTGGAG  
CGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGA

TAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAAATAGGCT  
GTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTTACGC  
GTGCTAGCCCTCGAGCAGGATCTATACATTGAATCAATATTGGCAATTAGCCATATTAGTCA  
TTGGTTATATAGCATAAATCAATATTGGCTATTGGCCATTGCATACGTTGTATCTATATCAT  
AATATGTACATTTATATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTATTGAC  
TAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCGCGC  
TTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTTGACG  
TCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGT  
GGAGTATTTACGGTAAACTGCCCACCTTGGCAGTACATCAAGTGTATCATATGCCAAGTCCGC  
CCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGACCTTA  
CGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGTATGCG  
GTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCC  
ACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACAAAATCAACGGGACTTTCCAAAATGT  
CGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATAT  
AAGCAGAGCTCGTTTTAGTGAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGTTTTGACC  
TCCATAGAAGACACCGGGACCGATCCAGCCTCCCCTCGAAGCTCGACTCTAGGGGCTCGAGA  
TCTGCGATCTAAGTAAGCTTGCATGCCTGCAGGTGCGCCGCCACGACCGGTGCCGCCACCAT  
CCCCTGACCCACGCCCCTGACCCCTCACAAGGAGACGACCTTCCATGACCGAGTACAAGCCC  
ACGGTGCGCCTCGCCACCCGCGACGACGTCCCCGGGCGGTACGCACCCTCGCCGCCGCGTT  
CGCCGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCACATCGAGCGGGTCACCG  
AGCTGCAAGAACTCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTGCGGGAC  
GACGGCGCCGCGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTTCGC  
CGAGATCGGCCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGG  
AAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTTCTGGCCACCGTCGGCGTC  
TCGCCCCGACCACCAGGGCAAGGGTCTGGGCAGCGCCGTCGTGCTCCCGGAGTGGAGGCGGC  
CGAGCGCGCCGGGGTGCCCGCCTTCCTGGAGACCTCCGCGCCCCGCAACCTCCCCTTCTACG  
AGCGGCTCGGCTTCACCGTCACCGCCGACGTCGAGGTGCCCGAAGGACCGCGCACCTGGTGC  
ATGACCCGCAAGCCCGGTGCCTGACGCCCCGCCCCACGACCCGCAGCGCCCGACCGAAAGGAG  
CGCACGACCCCATGGCTCCGACCGAAGCCGACCGGGCGGCCCGCCGACCCCGCACCCGCC  
CCCGAGGCCACCGACT

**Fig. 12**



**pCMV-pur-attP (SEQ ID NO: 5)**

CTAGAGTCGGGGCGGCCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC  
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT  
TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTAT  
GTTTCAGGTT CAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTG  
GTAAATCGATAAGGATCAATTCCGGCTTCGACTAGTACTGACGGACACACCGAAGCCCCGGC  
GGCAACCCTCAGCGGATGCCCCGGGGCTTCACGTTTTCCAGGTCAGAAGCGGTTTTCCGGA  
GTAGTGCCCCAACTGGGGTAACCTTTGAGTTCTCTCAGTTGGGGGCGTAGGGTCGCCGACAT  
GACACAAGGGGTTGTGACCGGGGTGGACACGTACGCGGGTGCTTACGACCGTCAGTCGCGCG  
AGCGCGACTAGTACAAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCCTTCAACCCAG  
TCAGCTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTT  
ATCATGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCCTCGCTCACTGACTCGC  
TGCGCTCGGTCGTTCCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTA  
TCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAG  
GAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATC  
ACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCG  
TTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCT  
GTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCA  
GTTCCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTTCAGCCCGAC  
CGCTGCGCCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC  
ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGT  
TCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTG  
CTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGC  
TGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAG  
AAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGG  
ATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTA AAAATGAAG  
TTTTAAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCA  
GTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTC  
GTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCG  
AGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGC  
GCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCT  
AGAGTAAGTAGTTCGCCAGTTAATAGTTTTCGCAACGTTGTTGCCATTGCTACAGGCATCGT  
GGTGTACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAG  
TTACATGATCCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTC  
AGAAGTAAGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTAC  
TGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAG  
AATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCA  
CATAGCAGAACTTTAAAAGTGCTCATCATTGGAACGTTCTTCGGGGCGAAAACCTCTCAAG  
GATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAG  
CATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAA  
AAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTCAATATTATTG  
AAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATA  
AACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGC  
GCATTAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCT  
AGCGCCCGCTCCTTTTCGCTTTCTTCCCTTCTTTCTCGCCACGTTGCGCGGCTTTCCCCGTC  
AAGCTCTAAATCGGGGGCTCCCTTTAGGGTCCGATTTAGTGCTTTACGGCACCTCGACCCC  
AAAAAACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTTCG  
CCCTTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACAC  
TCAACCCTATCTCGGTCTATTCTTTTGATTATAAGGGATTTTGCCGATTTTCGGCCTATTGG  
TTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGTTTAC  
AATTTCCCATTCGCCATTTCAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTT  
CGCTATTACGCCAGCCCAAGCTACCATGATAAGTAAGTAATATTAAGGTACGGGAGGTACTT  
GGAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAA  
TCGATAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATA

GGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTT  
 ACGCGTGCTAGCCCTCGAGCAGGATCTATACATTGAATCAATATTGGCAATTAGCCATATTA  
 GTCATTGGTTATATAGCATAAATCAATATTGGCTATTGGCCATTGCATACGTTGTATCTATA  
 TCATAATATGTACATTTATATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTAT  
 TGACTIONAGTTATTAATAGTAATCAATTACGGGGTCAATTAGTTCATAGCCCATATATGGAGTTC  
 CGCGTTACATAACTTACGGTAAATGGCCCCGCTGGCTGACCGCCCAACGACCCCCGCCCATT  
 GACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCATTGACGTCAAT  
 GGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGT  
 CCGCCCCCTATTGACGTCAATGACGGTAAATGGCCCCGCTGGCATTATGCCCAGTACATGAC  
 CTTACGGGACTTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGA  
 TGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTTGACTCACGGGGATTTCGAAGT  
 CTCCACCCCATTTGACGTCAATGGGAGTTTTGTTTTTGGCACCAAAATCAACGGGACTTTTCCAAA  
 ATGTCGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCT  
 ATATAAGCAGAGCTCGTTTTAGTGAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGTTTT  
 GACCTCCATAGAAGACACCGGGACCGATCCAGCCTCCCCCTCGAAGCTCGACTCTAGGGGGCTC  
 GAGATCTGCGATCTAAGTAAGCTTGCATGCCTGCAGGTGGGCCGCCACGACCGGTGCCGCCA  
 CCATCCCCCTGACCCACGCCCCCTGACCCCTCACAAGGAGACGACCTTCCATGACCGAGTACAA  
 GCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCCGGGCCGTACGCACCCCTCGCCGCCG  
 CGTTTCGCCGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCACATCGAGCGGGTC  
 ACCGAGCTGCAAGAACTCTTCTCACGCGCGTCGGGGCTCGACATCGGCAAGGTGTGGGTGCG  
 GGACGACGGCGCCGCGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGT  
 TCGCCGAGATCGGGCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAG  
 ATGGAAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCTTGGCCACCGTCGG  
 CGTCTCGCCCGACCAACAGGGCAAGGGTCTGGGCAGCGCCGTGCTGCTCCCCGGAGTGGAGG  
 CGGCCGAGCGCGCCGGGTGCCCCGCTTCTTGGAGACCTCCGCGCCCCGCAACCTCCCCCTTC  
 TACGAGCGGCTCGGCTTCACCGTCACCGCCGACGTGAGGTGCCCCGAAGGACCGCGCACCTG  
 GTGCATGACCCGCAAGCCCGGTGCCTGACGCCCCGCCCCACGACCCGCAGCGCCCGACCGAAA  
 GGAGCGCACGACCCCATGGCTCCGACCGAAGCCGACCCGGGCGGCCCGCCGACCCCGCACCC  
 CGCCCCCGAGGCCCAACCGACT

**Fig. 13**

**pCMV-EGFP-attB (SEQ ID NO: 6)**

CTAGAGTCGGGGCGGCCGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC  
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT  
TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTAT  
GTTTCAGGTT CAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTG  
GTAAATCGATAAGGATCAATTCGGCTTCAGGTACCGTCGACGATGTAGGTCACGGTCTCGA  
AGCCGCGGTGCGGGTGCCAGGGCGTGCCCTTGGGCTCCCCGGGCGCGTACTCCACCTCACCC  
ATCTGGTCCATCATGATGAACGGGTGCGAGGTGGCGGTAGTTGATCCCGGCGAACGCGCGGCG  
CACC GGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGTGAGCACGGGACGTG  
CGACGGCGTCGGCGGGTGCGGATACGCGGGGCAGCGTCAGCGGGTTCTCGACGGTCACGGCG  
GGCATGTGACAGCCGAATTGATCCGTGACCGATGCCCTTGAGAGCCTTCAACCCAGTCAG  
CTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTTATCA  
TGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGCG  
CTCGGTGCTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCA  
CAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAAC  
CGTAAAAAGGCCGCGTTGCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAA  
AATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTT  
CCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC  
GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTC  
GGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCCGACCGCT  
GCGCCTTATCCGGTAACATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTG  
GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTT  
GAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGA  
AGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGCTGGT  
AGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGA  
TCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAACTCACGTTAAGGGATTT  
TGGTCATGAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAATAATGAAGTTTT  
AATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGA  
GGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGT  
AGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC  
CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAG  
AAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAG  
TAAGTAGTTCGCCAGTTAATAGTTTGC GCAACGTTGTTGCCATTGCTACAGGCATCGTGGTG  
TCACGCTCGTCGTTTGGTATGGCTTCATT CAGCTCCGGTCCCAACGATCAAGGCGAGTTAC  
ATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGT CAGAA  
GTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTC  
ATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATA  
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**Fig. 14**

**p-12.0-lys-LSPIFNMM-CMV-pur-attB (SEQ ID NO: 7)**

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TGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCCCGACCGCTGC



GCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGC  
AGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGA  
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**Fig. 15**

**pOM IFN-Ins-CMV-pur-attB (SEQ ID NO: 8)**

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GGTCACTCTGTGGCCAGAAGAAGGACAAAGATGGAAATTGCAGATTGAGTCACGTTAAGCAG  
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CCTTTTACAACAGAAGTTTTTCATCAAAATAACGTGGCAAAGCCCAGGAATGTTTGGGAAAAG  
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AAACCAGCCAAGGGTTTTCTGTGCTGTTACAGAGGCAGGGCCAGCTGGAGCTGGAGGAGG  
TTGTGCTGGGACCCTTCTCCCTGTGCTGAGAATGGAGTGATTTCTGGGTGCTGTTCTGTGG  
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TGCAGAAAGATGGATGTGCACCTCCCTCCTGCTAATGCAGCCGTGAGCTTATGAAGGCAATG  
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CCAGGGATGCATTCATAAGGGCAATATATCTTGAGGCTGCGCCAAATCTTTCTGAAATATTC  
ATGCGTGTTCCCTTAATTTATAGAAACAAACACAGCAGAATAATTATTCGAATGCCTCCCCCT  
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GCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCG  
CCCGACCAACAGGGCAAGGCTCTGGGACGCGCCGTGCTGCTCCCCGGAGTGGAGGCGGCCGA  
GCGCGCCGGGTGCCCGCCTTCTGGAGACCTCCGCGCCCCGCAACCTCCCCCTTCTACGAGC  
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GCGAACGCGCGGCGCACCGGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGT  
GAGCACGGGACGTGCGACGGCGTTCGGCGGGTGCGGATACGCGGGGCAGCGTCAGCGGGTTCT  
CGACGGTCACGGCGGGCATGTCGACAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCC  
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**Fig. 16**



**pRSV-C31int (SEQ ID NO: 9)**

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 CATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGA  
 AACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCT  
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 GCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTTCGTTCCGTTCCAAG  
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 TTTGAATGTATTTAGAAAAATAAACAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTG  
 CCACCTGACGTGACGGATCGGGAGATCTCCCGATCCCCTATGGTCGACTCTCAGTACAA  
 TCTGCTCTGATGCCGCATAGTTAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCG  
 CTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCTTGACCGACAATTGCA  
 TGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATA  
 CGCGTGCTAGGGGTCTAGGATCGATTCTAGGAATTCTCTAGCCGCGGTCTAGGGATCCCCG  
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 GCTCCCTGCTTGTGTGTTGGAGGTGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAAC  
 AAGGCAAGGCTTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTTGGCT  
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 GAAGTAAGGTGGTACGATCGTGCCTTATTAGGAAGGCAACAGACAGGTCTGACATGGATT  
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**Fig. 17**

**pCR-XL-TOPO-CMV-PUR-attB (SEQ ID NO: 10)**

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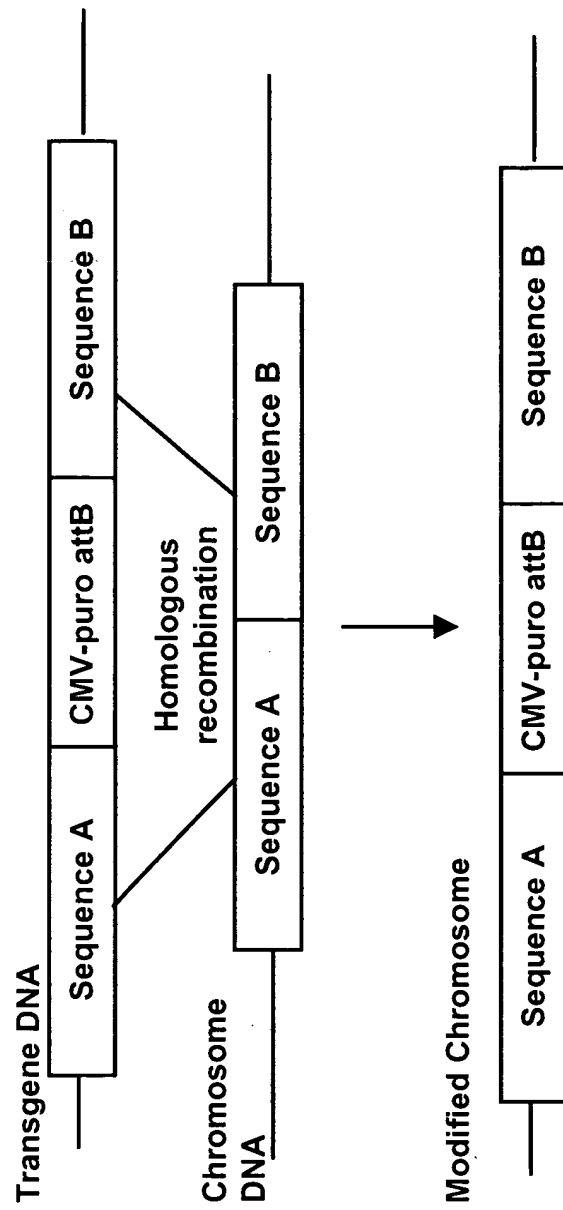
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 CCAGTCCGCAGAAACGGTGCTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAA  
 GGGAAAACGCAAGCGCAAAGAGAAAAGCAGGTAGCTTGCAGTGGGCTTACATGGCGATAGC  
 TAGACTGGGCGGTTTTATGGACAGCAAGCGAACCGGAATTGCCAGCTGGGGCGCCCTCTG  
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 CACGTAECTCGGATGGAAGCCGGTCTTGTGATCAGGATGATCTGGACGAAGAGCATCAGG  
 GGCTCGCGCCAGCCGAACCTGTTGCCAGGCTCAAGGCGAGCATGCCCAGGGCAGGATC  
 TCGTCGATGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTT  
 CTGGATTTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCCGTTGG  
 CTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCCTCGTGCTTT  
 ACGGTATCGCCGCTCCCGATTTCGACGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCT  
 TCTGAATTATTAACGCTTACAATTTCTGATGCGGTATTTTCTCCTTACGCATCTGTGCG  
 GTATTTTACACCGCATACAGGTGGCACTTTTCCGGGAAATGTGCGCGGAACCCCTATTTG  
 TTTATTTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAAT  
 GCTTCAATAATAGCACGTGAGGAGGGCCACCATGGCCAAAGTTGACCAGTGCCGTTCCGGT  
 GCTCACCGCGCGCGACGTGCGCGGAGCGGTGCGAGTTCTGGACCGACCGGCTCGGGTTCTC  
 CCGGACTTTCGTGGAGGACGACTTCGCCGGTGTGGTCCGGGACGACGTGACCCTGTTTCAT  
 CAGCGCGGTCCAGGACCAGGTGGTGCCGGAACACCCCTGGCCTGGGTGTGGGTGCGCGG  
 CCTGGACGAGCTGTACGCCGAGTGGTCCGAGGTCGTGTCACGAACCTCCGGGACGCCTC  
 CGGGCCGGCCATGACCGAGATCGGCGAGCAGCCGTGGGGGCGGGAGTTCCGCCCTGCGCGA  
 CCCGGCCGGCAACTGCGTGCACTTCGTGGCCGAGGAGCAGGACTGACACGTGCTAAAACCT  
 TCATTTTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTTGATAATCTCATGACCAAAAT  
 CCCTTAACGTGAGTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAAAAACACCGCT  
 ACCAGCGGTGGTTTTGTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACCTGG  
 CTTTCAGCAGAGCGCAGATACCAAATACTGTCTTCTAGTGTAGCCGTAGTTAGGCCACCA  
 CTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGC  
 TGCTGCCAGTGGCGATAAGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGA  
 TAAGGCGCAGCGGTGCGGCTGAACGGGGGGTTCGTGCACACAGCCAGCTTGAGCGAAC  
 GACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGA  
 AGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAG  
 GGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTG  
 ACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAG  
 CAACGCGGCCTTTTTACGGTTCCCTGGGCTTTTGCTGGCCTTTTGCTCACATGTTCTTTCC  
 TCGGTTATCCCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGATACCGC  
 TCGCCGCAGCCGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGCGGAAG

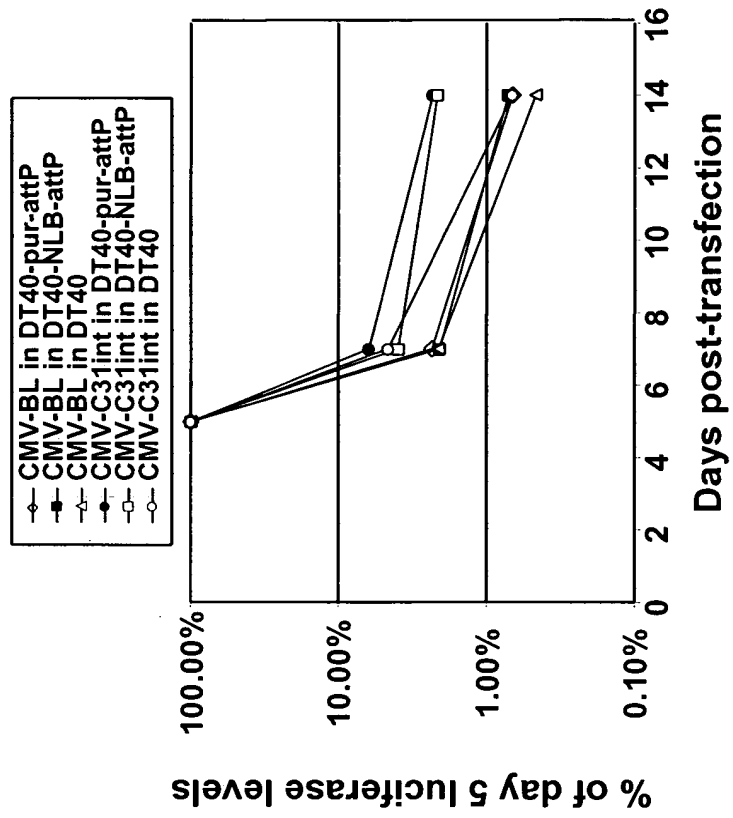
**FIG. 18**

**SEQ ID NO: 11**

GACTAGTACTGACGGACACACCGAAGCCCCGGCGGCAACCCTCAGCGGATGCCCCGGGGCTT  
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TTCTCTCAGTTGGGGGCGTAGGGTCGCCGACATGACACAAGGGGTTGTGACCGGGGTGGACA  
CGTACGCGGGTGCTTACGACCGTCAGTCGCGCGAGCGCGACTAGTACA

***Fig. 19***

**Fig. 20**

**Fig. 21**